Proposed Amendments to the Claims

1. (withdrawn) A method of making a solder joint, the method comprising the steps of:

depositing particles comprising at least one coating on a substrate; and

reflowing the particles to at least partially melt the coating, thereby forming a substantially continuous solidified solder material.

2. (withdrawn) The method of claim 1 wherein the depositing step comprises depositing via a process selected from the group consisting of electrodeposition, electrophoresis, electroplating, evaporation, screen printing, and photostencil bumping.

3. (withdrawn) The method of claim 1 wherein the depositing step comprises blending the particles into a paste or ink.

4. (withdrawn) The method of claim 1 wherein the depositing step comprises electrodepositing in one deposition step at least two materials with incompatible electropotentials.

5. (withdrawn) The method of claim 1 wherein the solder material comprises unmelted particles in a solidified matrix.

6. (withdrawn) The method of claim 5 wherein the unmelted particles increase at least one strength of the solder material.

7. (withdrawn) The method of claim 6 wherein the strength is selected from the group consisting of shear strength and compressive strength.

8. (withdrawn) The method of claim 6 wherein the solder material is reinforced by the unmelted particles.

9. (withdrawn) The method of claim 1 wherein the reflowing step comprises forming an alloy.

10. (withdrawn) The method of claim 9 wherein the reflowing step comprises forming an alloy which comprises substantially all of the coating of the particles.

11. (withdrawn) The method of claim 10 wherein the alloy has a substantially higher melting temperature than the coating.

12. (withdrawn) The method of claim 9 wherein the solder material contains a substantially uniform distribution of stoichiometries.

13. (withdrawn) The method of claim 12 wherein the solder material is substantially uniform in composition.

14. (withdrawn) The method of claim 1 wherein the depositing step comprises controlling a concentration of the particles, thereby reducing a size of the solder joint in directions parallel to the substrate surface.

15. (withdrawn) The method of claim 14 further comprising the step of decreasing the pitch of solder joints on the substrate.

16. (withdrawn) The method of claim 1 wherein the particles are magnetic.

17. (withdrawn) The method of claim 16 wherein the depositing step comprises controlling a particle loading with at least one external magnetic field.

18. (withdrawn) The method of claim 16 wherein the depositing step comprises controlling a deposition location with at least one external magnetic field.

19. (withdrawn) The method of claim 16 wherein the reflowing step comprises controlling a particle distribution in the solder joint with at least one external magnetic field.

20. (withdrawn) A solder material comprising particles that were coated before being deposited on a substrate.

21. (currently amended) A method of co-depositing particles comprising the steps of:

suspending the particles in a suspension;

applying at least one magnetic field to the particles in order to vary a co-depositon rate or location of the particles;

co-depositing on a substrate the particles along with at least one component of the suspension, the component comprising a composition different than a composition of the particles, thereby resulting in a deposit comprising embedded particles; and

forming a desired structure.

22. (original) The method of claim 21 wherein the applying step comprises controlling at least one deposition location of the particles.

23. (original) The method of claim 21 wherein the applying step comprises controlling a particle loading.

24. (original) The method of claim 21 wherein the particles are magnetic.

25. (original) The method of claim 22 wherein the particles have been coated with at least one coating.

26. (original) The method of claim 25 wherein the coating is magnetic.

27. (original) The method of claim 21 wherein the suspending step comprises suspending the particles in an electrolytic solution.

28. (original) The method of claim 27 wherein the co-depositing step comprises co-depositing in one deposition step at least two materials with incompatible electropotentials.

29. (original) The method of claim 21 wherein the suspending step comprises suspending the particles in an ink or paste.

30. (original) The method of claim 22 wherein the forming step comprises filling a via.

31. (original) The method of claim 30 wherein the forming step comprises accelerating a fill rate by controlling particle loading.

32. (original) The method of claim 30 wherein the forming step further comprises controlling the particle location with at least one external magnetic field, thereby permitting fill electrodeposition within the via without the presence of prior seed metallization of an entire surface of the via.

33. (currently amended) A method of making a via comprising the steps of:

providing seed metallization to only a portion of a surface of the via; and

subsequently co-depositing in the via conducting particles dispersed in an electrodeposit, thereby forming a via comprising embedded particles;

wherein a composition of the electrodeposit is different than a composition of the particles.

34. (withdrawn) A via comprising a seed metallization layer only partially coating a surface of the via.

35. (withdrawn) A catalyst comprising a magnetic particle coated with at least one catalytic material.

36. (withdrawn) An electrode comprising at least one surface layer deposited using the catalyst of claim 35.

37. (withdrawn) The catalyst of claim 35 further comprising a first coating of the particle, wherein said first coating comprises a stable barrier to prevent diffusion of elements comprising the particle into the catalytic material.